REMARKS

Reconsideration of this application is requested. Claims 1 to 3 and 9 have been elected and claims 4 to 8 and 10 to 12 have been cancelled without prejudice in view of the USPTO restriction requirement.

Support for the new claims is in the application as filed at page 9, paragraph 22 (which describes the machine component data stored in a database) and at page 10, line 25 (which describes comparing the ablation progress on the surface of a machine component with machine component data obtained by interrogating the database).

The rejection of claims 1 to 3 and 9 as being anticipated by Matthews et al (US Patent 5,986,234 - Matthews) is traversed.

Independent claim 9 defines a laser cleaning method which uses a database to select the proper laser power level for a machine component to be cleaned and to obtain machine data that is compared to laser ablation feedback data to control the laser that is ablating the machine surface. Independent claim 1 has been amended to recite a database of laser power levels for various machine components wherein the database is used to set the laser power level. Further, dependent claim 2 requires a "database with the machine component surface data and corresponding laser power related data for ablating surface contaminants or coatings from the surface" and data from this database is compared to "feedback data" from the laser ablation process.

Matthews discloses a laser cleaning process that monitors the surface being cleaned for a change in surface reflectivity. There is no teaching in Matthews of creating a database that stores machine component information with corresponding information on

laser power level or machine surface condition data, or of interrogating a database to select the power level and/or surface condition data corresponding to the machine component being cleaned. Accordingly, Matthews does not disclose or suggest the method recited in the rejected claims.

Matthews does teach controlling a cleaning laser based on the reflectivity of the surface being cleaned.

> "**Feedback control** may be incorporated in the system using one of the methods described in prior art or using another method. **A simple method that is effective for many applications where the albedo of the substrate is significantly larger than that of the absorbing layer (such as paint on a metal or concrete substrate) is to use a photodiode system to monitor the specular and diffuse reflected laser light. The feedback system would be adjusted to terminate cleaning of a particular surface region when the diffuse and/or specular reflectivity of the surface increases substantially and represents the characteristics of the underlying cleaned substrate and not the surface coating.** Feedback control is used to control the laser firing and the scanning of the beam over the work surface. FIG. 7 shows an example of one type of feedback control system usable in the present invention. A probe illuminator beam 70 is directed through first and second beamsplitters to make the beam to be co-linear with the main laser beam 72. The portion of the beam 70 that is reflected back from the work surface 74 onto the feedback sensor 76 represents the amount of light reflected and scattered from the surface. As the surface is cleaned the reflected signal will indicate that and the control unit 78 will move the beam to the next part of the surface." [Matthews, col. 11, ln. 64 to col. 12, ln. 20 (emphasis supplied)]

The elements of the rejected claims that are not disclosed by Matthews include (without limitation):

Programming a controller coupled to a laser source for controlling the laser source of the laser beam to perform laser ablation, wherein said controller accesses a database having corresponding laser power data (Claims 1-3 and 9)

- Determining a laser power level corresponding to the machine component by interrogating the database to identify the corresponding laser power data for the machine component (Claims 1-3 and 9)
- Directing the laser beam at the machine component surface for vaporizing surface contaminants and coatings deposited on said surface without changing base material properties of said machine component, wherein the laser beam is at the power level corresponding to the machine component (Claims 1-3 and 9)
- Comparing the collected vaporization data and the machine component data to determine whether to cease vaporization of the surface by the laser beam. (Claims 2 and 9). Matthews discloses comparing laser reflection data with data that "represents the characteristics of the underlying cleaned substrate and not the surface coating". There is no teaching in Matthews to maintain a database of machine component data that correlates components to data that can be compared to a laser feedback signal.

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- Coupling the controller of the laser to a computer system having a processor and the database, wherein the database is loaded with the machine component data and the corresponding laser power related data for ablating surface contaminants or coatings from the surface. (Claim 2).

All claims are in good condition for allowance. If any small matter remains outstanding, the Examiner is requested to telephone the undersigned. Prompt reconsideration and allowance of this application is requested.

Respectfully submitted,

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